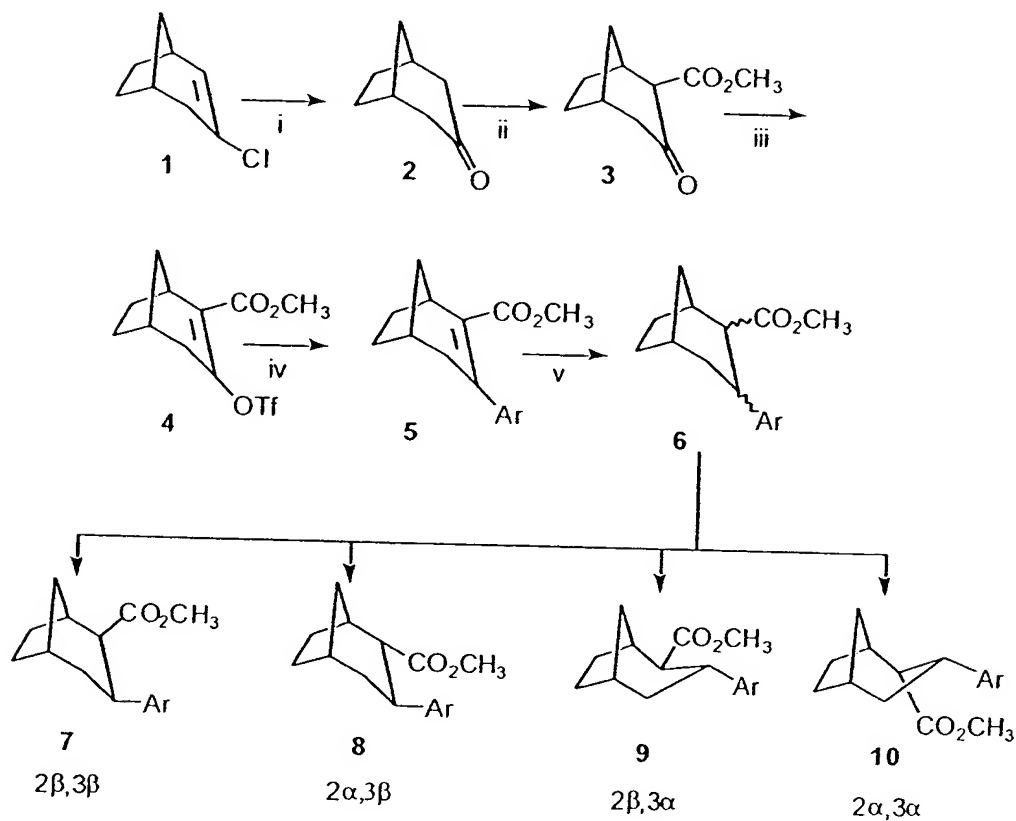


FIG. 1

FIGURE 2

Scheme 1. Synthesis of 2-carbomethoxy-3-aryl bicyclo[3.2.1]octanes

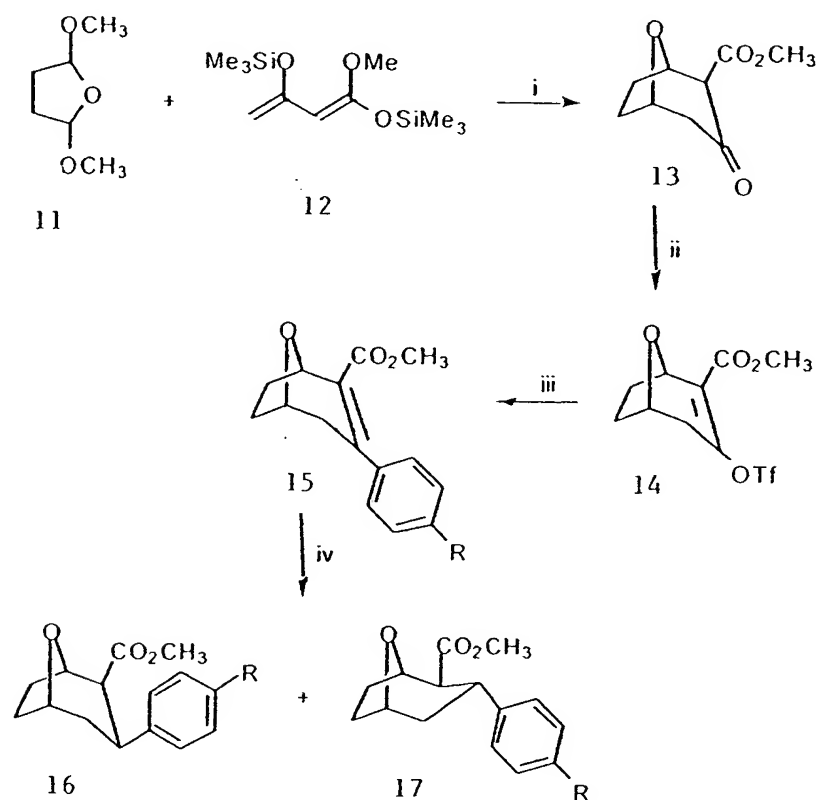


Ar = a. 3,4-Cl₂C₆H₃ b. 2-Naphthyl c. 4-FC₆H₄ d. C₆H₅

Reagents: i) H₂SO₄; ii) LDA/THF, CNCOOCH₃; iii) NaN(TMS)₂, PhNTf₂; iv) ArB(OH)₂, Pd₂(dba)₃; v) SmI₂, CH₃OH

FIGURE 3

Scheme 2 Synthesis of 3-aryl-8-oxabicyclo[3.2.1]octanes

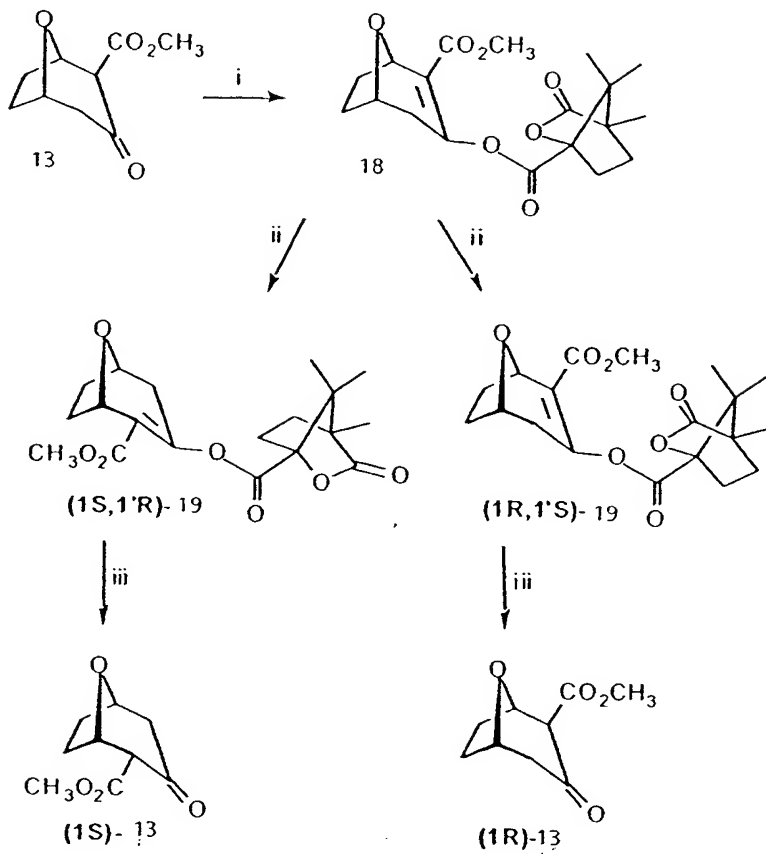


R	a	b	c	d	e	f	g	h
15, 16, 17	H R/S	F R/S	Cl R/S	Br R/S	I R/S	3,4-Cl ₂ R/S	3,4-Cl ₂ 1R	3,4-Cl ₂ 1S
R	i	j	k	l				
15, 16, 17	CHO R/S	CH(CH ₃) ₂ R/S	C(CH ₃)=CH ₂ R/S	C≡CCH ₃ R/S				

Reagents : i) TiCl_4 , ii) $\text{Na}(\text{TMS})_2\text{N}$, $\text{Ph}(\text{Tf})_2\text{N}$, THF, -78°C . iii) $\text{ArB}(\text{OH})_2$, Pd_2dba_3 , Na_2CO_3 , LiCl. iv) SmI_2 , Methanol, -78°C .

FIGURE 4

Scheme 3 Resolution of keto ester 3



Reagents: i) $\text{Na}(\text{TMS})_2\text{N}$, (S)-Camphanic chloride or (R)-Camphanic chloride, THF, -78°C . ii) Hexane / CH_2Cl_2 (2:1), 0°C . iii) LiOH , THF, MeOH, H_2O .